REMARKS

This is a full and timely response to the Final Office Action mailed by the U.S. Patent and Trademark Office on November 13, 2007. Upon entry of the attached amendments, claims 1-31 are pending in the application. Claims 1, 2, 9-11, 13, 16, 18, 22, 24 and 25 are amended. Support for the amendments to claims 1, 2, 9-11, 13, 16, 18, 22, 24 and 25 can be found in FIG. 4 and the related detailed description. Consequently, no new matter is added to the present application.

The following remarks address each rejection. Accordingly, reconsideration and allowance of the application and presently pending claims 1-31 are respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 1-5, 9, 10, 18 and 19 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,396,345 to Dolman *et al.* (hereafter *Dolman*) in view of U.S. Patent No. 7,088,968 to Zipper (hereafter *Zipper*).

Claims 24-28 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 4,485,358 to Andren *et al.* (hereafter *Andren*) and *Dolman* in view of *Zipper*.

Claims 6-8, 11-17 and 20-23 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Dolman* and *Zipper* in view of U.S. Patent No. 5,912,926 to Koenck *et al.* (hereafter *Koenck*).

Claims 29-31 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Dolman*, *Zipper* and *Andren* in view of *Koenck*.

For a claim to be properly rejected under 35 U.S.C. § 103, "[t]he PTO has the burden under section 103 to establish a *prima facie* case of obviousness. In order to make a proper *prima facie* case of obviousness; three basic criteria must be met, as set forth in MPEP § 706.02(j). First, there must be some suggestion or motivation; either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references, when combined, must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on Applicant's disclosure."

Applicants' independent claims 1, 9, 18 and 24, as amended, each include elements and features that are not disclosed, taught or suggested by the proposed combination of *Dolman* and *Zipper*.

Claims 1-5

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reasons, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest Applicants' claimed filter arrangement.

Applicants' claim 1, as amended, is directed to a system for generating amplitude matched, phase shifted signals. The system comprises "a filter arrangement including a plurality of input and output nodes, a first set of input nodes arranged to receive an input signal, a second set of input nodes coupled to electrical ground, each output node configured to provide an associated vector that is offset in phase from a vector associated with each other output node."

First, the proposed combination of *Dolman* and *Zipper* does not disclose, teach or suggest Applicants' claimed system which comprises at least "a first set of input nodes arranged to receive an input signal," and "a second set of input nodes coupled to electrical ground," among other features. Both *Dolman* and *Zipper* are entirely silent regarding a plurality of input nodes, a first set of input nodes arranged to receive an input signal, a second set of input nodes coupled to electrical ground. Thus, the proposed combination fails to disclose, teach, or suggest all elements of Applicants' claimed system. Accordingly, for at least this first reason, the proposed combination fails to establish a *prima facie* case of obviousness of Applicants' claimed system and the rejection of claim 1 under 35 U.S.C. § 103(a) should be withdrawn.

Second, the proposed combination of *Dolman* and *Zipper* does not disclose, teach or suggest Applicants' claimed system, which generates amplitude matched, phase shifted signals.

Dolman teaches a phase and amplitude detector that identifies small signal errors in a single envelope having a large dynamic range, especially in the context of linearization of a power amplifier employing a pre-distortion technique. See *Dolman*, Abstract.

More specifically, *Dolman* describes a vector manipulation whereby a reference carrier vector (R), a reference carrier amplitude offset vector (A) and a reference carrier phase offset vector (P) are mathematically combined to generate frame of reference vectors R_1-R_4. The frame of reference vectors R_1-R_4 are added to a feedback carrier to generate error vectors E_1-E_4. Phase and amplitude error terms support subsequent generation of an error signal. (See *Dolman*, col. 4, lines 15-44).

Dolman (col. 12, lines 38-44; and col. 9, lines 31-44) is cited for the disclosure of a filter including a plurality of nodes, each node configured to provide an associated vector that is offset in phase from a vector associated with another node. The Office Action indicates that *Dolman* does not teach an adjustable element associated with each node, the adjustable element configured to receive a feedback signal and in response to the feedback signal substantially equalize an amplitude of each vector associated with each node. (See Office Action, page 2, item 2, fourth paragraph.) Applicants agree.

Zipper is cited for the alleged teaching of an adjustable element associated with each node, the adjustable element configured to receive a feedback signal and in response to the feedback signal substantially equalize an amplitude of each vector associated with each node. Applicants respectfully disagree with this interpretation of *Zipper*. The Office Action cites column 3, lines 39-44 of *Zipper* for the above-referenced teaching of substantially equalizing an amplitude of each vector associated with each node. In fact, the cited portion of *Zipper* discloses a technique for equalizing the average amplitude of the feedback signal. The cited portion of *Zipper* is included below for convenience of analysis.

> A live adaptation process may be used to correlate between the output and the input origin offset. Signal synthesizer 118 may also synthesize an output signal having a different amplitude than the input signal and an attenuator may be included to help equalize the average amplitude of the feedback signal.

In contrast with Applicants' claimed system, which generates amplitude matched, phase shifted signals, *Zipper* states "an attenuator may be included to help equalize *the average amplitude of the feedback signal*." (Emphasis added.) Applicants respectfully submit that an attenuator that helps to equalize the average amplitude of a feedback signal has entirely nothing to do with equalizing an amplitude of a vector associated with each output node of Applicants' claimed system. Accordingly, the proposed combination of *Dolman* and *Zipper* does not disclose, teach or suggest Applicants' claimed filter

arrangement configured to substantially equalize an amplitude of each vector associated with each other output node. Thus, for at least this separate and additional reason, the proposed combination fails to establish a *prima facie* case of obviousness of Applicants' claimed system and the rejection of claim 1 under 35 U.S.C. § 103(a) should be withdrawn.

Further, Applicants respectfully submit that dependent claims 2-5, which depend directly or indirectly from allowable independent claim 1, are allowable for at least the reason that they depend from allowable independent claims. *In re Fine*, 837 F.2d 1071, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1998).

Claims 9 and 10

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reasons, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest Applicants' claimed method.

Applicants' claim 9, as amended, is directed to a method for generating amplitude matched, phase shifted signals. The method comprises the step of "applying an input signal at a subset of a set of input nodes."

The proposed combination of *Dolman* and *Zipper* does not disclose, teach or suggest Applicants' claimed method, which comprises the step of "applying an input signal at a subset of a set of input nodes," among other steps.

Dolman (col. 12, lines 38-44; and col. 9, lines 31-44) is cited for the disclosure of a filter including a plurality of nodes, each node configured to provide an associated vector that is offset in phase from a vector associated with another node. *Zipper* is cited for the alleged teaching of an adjustable element associated with each node, the adjustable element configured to receive a feedback signal and in response to the feedback signal substantially equalize an amplitude of each vector associated with each node. Even if *Dolman* and *Zipper* teach all that the Office Action alleges, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the proposed combination fails to disclose, teach or suggest the step of "applying an input signal at a subset of a set of input nodes."

Both *Dolman* and *Zipper* are entirely silent regarding a plurality of input nodes. Consequently, *Dolman* and *Zipper* are silent regarding applying an input signal at a subset of

a set of input nodes. Thus, the proposed combination fails to disclose, teach, or suggest all steps of Applicants' claimed method. Accordingly, for at least this reason, the proposed combination fails to establish a *prima facie* case of obviousness of Applicants' claimed method and the rejection of claim 9 under 35 U.S.C. § 103(a) should be withdrawn.

Further, Applicants respectfully submit that dependent claim 10, which depends directly from allowable independent claim 9, is allowable for at least the reason that the claim depends from an allowable independent claim. *In re Fine, supra.*

Claims 18 and 19

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reasons, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest Applicants' claimed system.

Applicants' claim 18, as amended, is directed to a system for generating amplitude matched, phase shifted signals. The system comprises "filter means including a plurality of input and output nodes, a first set of input nodes arranged to receive an input signal, a second set of input nodes coupled to electrical ground, the filter means for providing a plurality of associated vectors that are offset in phase from each other vector associated with each other output node."

The proposed combination of *Dolman* and *Zipper* does not disclose, teach or suggest Applicants' claimed system, which comprises "a first set of input nodes arranged to receive an input signal, a second set of input nodes coupled to electrical ground," among other elements.

Dolman (col. 12, lines 38-44; and col. 9, lines 31-44) is cited for the disclosure of a filter including a plurality of nodes, each node configured to provide an associated vector that is offset in phase from a vector associated with another node. *Zipper* is cited for the alleged teaching of an adjustable element associated with each node, the adjustable element configured to receive a feedback signal and in response to the feedback signal substantially equalize an amplitude of each vector associated with each node.

Both *Dolman* and *Zipper* are entirely silent regarding a plurality of input nodes. Consequently, *Dolman* and *Zipper* are silent regarding a first set of input nodes arranged to receive an input signal and a second set of input nodes coupled to electrical ground. Even if

Dolman and *Zipper* teach all that the Office Action alleges, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the proposed combination fails to disclose, teach or suggest "a first subset of input nodes arranged to receive an input signal, a second subset of input nodes coupled to electrical ground." Thus, the proposed combination fails to disclose, teach, or suggest all elements of Applicants' claimed system. Accordingly, for at least this reason, the proposed combination fails to establish a *prima facie* case of obviousness of Applicants' claimed system and the rejection of claim 18 under 35 U.S.C. § 103(a) should be withdrawn.

Further, Applicants respectfully submit that dependent claim 19, which depends directly from allowable independent claim 18, is allowable for at least the reason that claim 19 depends from an allowable independent claim. *In re Fine, supra.*

Claims 24-28

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reasons, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest at least Applicants' claimed system.

Applicants' claim 24, as amended, is directed to a system for generating amplitude matched, phase shifted signals in a portable transceiver. The system comprises "a filter arrangement configured to operate on the local oscillator signal, the filter arrangement including a plurality of input and output nodes, a first set of input nodes arranged to receive the local oscillator signal, a second set of input nodes coupled to electrical ground, each output node configured to provide an associated vector that is offset in phase from a vector associated with each other output node."

The proposed combination of *Andren, Dolman* and *Zipper* does not disclose, teach or suggest Applicants' claimed system, which comprises "a plurality of input and output nodes, a first set of input nodes arranged to receive the local oscillator signal, a second set of input nodes coupled to electrical ground," among other elements. Both *Dolman* and *Zipper* are entirely silent regarding a plurality of input nodes. *Andren* is cited for its alleged disclosure of various features of claims 24-28 other than the aforementioned features. Applicants respectfully submit that *Andren* does not add anything to the combination of *Dolman* and *Zipper* that would remedy the aforementioned deficiencies.

Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings of *Andren, Dolman* and *Zipper* do not teach all features of independent claim 24.

Accordingly, favorable reconsideration and withdrawal of the rejection of dependent claim 24 under 35 U.S.C. § 103 are respectfully requested.

Further, Applicants respectfully submit that dependent claims 25-28, which depend directly or indirectly from allowable independent claim 24, are allowable for at least the reason that the claims depend from an allowable independent claim. *In re Fine, supra.*

Claims 6-8; 11-17 and 20-23

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged reasons, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest Applicants' amended independent claims 1, 9 and 18.

As shown above, Applicants' independent claims 1, 9 and 18, as amended, each include elements that are not disclosed, taught or suggested by the combination of *Dolman* and *Zipper*. *Koenck* is cited for its alleged disclosure of various features of claims 6-8, 11-17 and 20-23 other than the aforementioned features missing from *Dolman* and *Zipper*. Applicants respectfully submit that *Koenck* does not add anything to the combination of *Dolman* and *Zipper* that would remedy the aforementioned deficiencies.

Thus, the proposed combination of *Dolman, Zipper* and *Koenck* does not disclose, teach or suggest Applicants' claimed systems and methods. Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings of *Dolman, Zipper* and *Koenck* do not teach all features of dependent claims 6-8, which depend from independent claim 1; dependent claims 11-17, which depend from independent claim 9 and dependent claims 20-23, which depend from claim 18.

Accordingly, favorable reconsideration and withdrawal of the rejection of dependent claims 6-8, 11-17 and 20-23 under 35 U.S.C. § 103 are respectfully requested.

Claims 29-31

Without conceding the propriety of the asserted combination or whether one of ordinary skill would have been motivated to make the asserted combination for the alleged

reasons, Applicants respectfully submit that the asserted combination does not disclose, teach or suggest all elements of Applicants' amended independent claim 24, from which dependent claims 29-31 depend.

As shown above, Applicants' independent claim 24, as amended, includes elements that are not disclosed, taught or suggested by the combination of *Dolman* and *Zipper*. *Koenck* and *Andren* are cited for their alleged disclosure of various features of claims 29-31 other than the aforementioned features missing from the combination of *Dolman* and *Zipper*. Applicants respectfully submit that *Koenck* and *Andren* do not add anything to the disclosure of *Dolman* and *Zipper* that would remedy the aforementioned deficiencies.

Thus, the proposed combination of *Dolman, Zipper, Andren* and *Koenck* does not disclose, teach or suggest Applicants' claimed system. Accordingly, the proposed combination fails to establish a *prima facie* case of obviousness for at least the reason that the combined teachings of *Dolman, Zipper, Andren* and *Koenck* do not teach all features of dependent claims 29-31, which depend from independent claim 24.

Accordingly, favorable reconsideration and withdrawal of the rejection of dependent claims 29-31 under 35 U.S.C. § 103 are respectfully requested.

CONCLUSION

In summary, Applicants respectfully submit that presently pending claims 1-31 are allowable and the present application is in condition for allowance. Accordingly, a Notice of Allowance is respectfully solicited. Should the Examiner have any comments regarding the Applicants' response or intends to dispose of this matter in a manner other than a Notice of Allowance, Applicants request that the Examiner telephone Applicants' undersigned attorney.

Respectfully submitted,

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